

(12) United States Patent

Kesteleyn et al.

(54) METHOD FOR THE PREPARATION OF HEXAHYDRO-FURO-[2,3-B]FURAN-3-OL

(75) Inventors: Bart Rudolf Romanie Kesteleyn, Berlare (BE); Dominique Louis Nestor

Surleraux, Machelen (BE); Peter Jan Leonard Mario Quaedflieg, Waalre

Assignee: Tibotec Pharmaceuticals Ltd., Dublin

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 288 days.

10/489,059

(21) Appl. No.:

(22) PCT Filed: Sep. 6, 2002

(86) PCT No.: PCT/EP02/10062

§ 371 (c)(1),

(2), (4) Date: Mar. 9, 2004

(87) PCT Pub. No.: WO03/022853

PCT Pub. Date: Mar. 20, 2003

(65)**Prior Publication Data**

> US 2004/0249175 A1 Dec. 9, 2004

(30)Foreign Application Priority Data

Sep. 10, 2001 (EP) 01203416

(51) Int. Cl.

C07D 493/06 (2006.01)

(52) U.S. Cl. 549/464

US 7,126,015 B2 (10) Patent No.:

(45) **Date of Patent:** Oct. 24, 2006

(58) Field of Classification Search 549/464 See application file for complete search history.

References Cited (56)

FOREIGN PATENT DOCUMENTS

WO 94/26749 * 11/1994 WO 95/06030 WO 3/1995 WO WO 99/67417 12/1999 WO WO 01/25240 A1 4/2001

OTHER PUBLICATIONS

Schreiber et al., Tetrahed. Letter, (1986), vol. 27(23), pp. 2575-

Schreiber et al., Tetrahed. Letter, (1988), vol. 29(51), pp. 6689-6692.*

Arun K. Ghosh et al., Nonpeptidal P, Ligands for HIV Protease Inhibitors: Structure-Based Design, Synthesis, and Biological Evaluation, J. Med. Chem., 1996, 39, pp. 3278-3290.

M. Pezechk et al., A New Route to Perhydro- and Tetrahydro-Furo-2,3b Furans via Radical Cyclisation, Tetrahydron Letters, vol. 27, No. 32, pp. 3715-3718, 1986.

M. Uchiyama et al., Steroselective synthesis of optically active perhydrofuro[2,3-b]furan derivatives, Tetrahedron Letters 42 (2001) pp. 4653-4656.

* cited by examiner

Primary Examiner—Taofiq Solola (74) Attorney, Agent, or Firm-Woodcock Washburn LLP

ABSTRACT (57)

The present invention relates to a method for the preparation of hexahydro-furo[2,3-b]furan-3-ol as well as novel intermediates for use in said method. More in particular the invention relates to a stereoselective method for the preparation of hexahydro-furo[2,3-b]furan-3-ol, and to a method amenable to industrial scaling up.

25 Claims, No Drawings